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10/667,060	09/22/2003	Richard C. Schaftlein	2002P15893US01	7828

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Siemens Corporation
Intellectual Property Department
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EXAMINER
HOANG, PHUONG N

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 October 2009*.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 3, 5 - 32* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1 - 3, 5 - 32* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application
6)☐ Other: _____.

DETAILED ACTION

1.   Claims 1 - 3, 5 – 32 are pending for examination.

Continued Examination Under 37 CFR 1.114

2.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on

10/20/2009 has been entered.

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1- 3, 5 – 15, 18 – 19, 21 – 26, 29, 31 - 32 are rejected under 35 U.S.C.**

103(a) as being unpatentable over by Kimura, US patent no. 6,996,828 in view of

Ronkka, US pub. no. 2004/0088710.

5.   Kimura and Ronkka references were cited in previous office action.

6.   **As to claim 1**, Kimura teaches method comprising of:

reassigning resources (reassigned resources, col. 1 - 3) in a soft programmable

logic controller (a soft programmable logic controller (multi-OS management program

204, col. 5 lines 1 – 4, col. 1 lines 30 – 60, col. 5 lines 1 - 5), said PCL comprising by a

single computer (single computer, abstract, and figure 2 and associated text), said

reassigning comprising the steps of:

selecting an interface in a first operating environment (first OS, col. 9 lines 35 –

55, col. 10 lines 55 - figures 9, 10, and 12 and associated text);

selecting a virtual slot in a second operating environment (entry point for second

OS) for installation of the interface;

creating an installation file in the first operating environment (object file name,

fig. 10 and associated text) for installation of the interface in the second operating

environment; and

installing the interface in the second operating environment using the

installation file to reassign a resource between the first operating environment and

the second operating environment (load device driver of the second OS, col. 15 lines 15

- 25), and interrupt line of the reassigned resource share in the second operating

environment (interrupt, figure 14 and associated text).

Kimura does not explicitly teach a real-time card and wherein the second

operating system has non-variable scan cycle timing.

Ronkka teaches real-time card (card, 0004) and the second operating system

has a non-variable scan cycle timing (timer/response time for each executing task for

OS_A so called real-time operating system can not be lengthen or have been

determined, 0002 - 0003, 0060, 0085).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Kimura and Ronkka because Ronkka's

non-variable cycle timing can be used for predicting a response time for an interrupt and

real-time operating systems are very efficient for controlling task, 0002).

7.   **As to claims 2 - 3**, Ronkka teaches wherein the first operating environment is

non real-time operating environment and the second operating environment is real-

time operating environment (OS_A is real-time operating system, 0060).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Kimura and Ronkka because Ronkka's

two types of operating systems executing in a single computing environment would

provide a multi-tasking running of mobile station functions, and data processing

function, and wherein a real-time operating system is typical designed for controlling

embedded devices such as mobile devices that is popular and widely used (0002,

0010).

8.   **As to claim 5**, Ronkka teaches installing a real-time device driver (device

drivers, 0051).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Kimura and Ronkka because Ronkka's

device driver comprising routines and information need for controlling a peripheral

device and handle the interrupt (0051).

9.   **As to claim 6**, Kimura teaches wherein the installing step overrides an

installation of a device driver associated with the first operating environment (update,

col. 11 lines 47 - 56).

10.   **As to claim 7**, Kimura teaches during the creating step, installation parameters

(parameter table 800) are obtained from the first operating environment and used in the

creation of the installation file (object file name, figure 10 and associated text).

11.   **As to claim 8 - 9**, Kimura teaches deleting the installation file (unload device

driver, col. 10 lines 37 - 40).

12.   **As to claim 10**, Kimura teaches interrupt (interrupt, figure 9A – 11 and

associated text) sharing for the reassigned resource so that an interrupt may be used

for more than one resource.

13.   **As to claim 11**, Kimura teaches the steps of displaying (display 114) the

resource for reassignment; and selecting an empty interface slot in the second

operating environment (virtual space in the second OS, col. 13 lines 20 - 22) to receive

the resource being one of an interface, a card, a device and a port.

14.   **As to claim 12**, Kimura teaches modifying (update, col. 11 lines 47 – 56)

installation parameters to specify an installation file for a real-time driver.

15.   **As to claim 13**, Kimura teaches updating registry (figures 10, 17, and 19 and

associated text).

16.   **As to claim 14**, this is the method claim of claim 1. See rejection for claim 1

above.

17.   **As to claim 15**, see rejection for claim 2 above.

18.   **As to claims 18**, Kimura teaches modifying (modifying for each particular device,

col. 6 lines 10 – 20) to installation parameters to specify an installation file for a real-

time driver.

19.   **As to claim 19**, see rejection for claim 11 above.

20.   **As to claim 21**, Ronkka teaches the resource being one of a card, a port, an

interface, and a device (peripherals, 0030, 0051).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kimura and Ronkka because Ronkka's embedded and peripheral devices such as mobile devices that is popular and widely used (0002, 0010).

21.   **As to claim 22**, this is the system claim of claim 1. See rejection for claim 1 above.

22.   **As to claim 23**, Ronkka teaches reassigning the resources to a real-time operating environment (0037, 0060).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Kimura and Ronkka because Ronkka's real-time operating system is typical designed for controlling embedded devices such as mobile devices that is popular and widely used (0002, 0010).

23.   **As to claim 24**, see rejection for claim 18 above.

24.   **As to claims 25 - 26**, Kimura teaches wherein the installing step overrides an installation of a device driver associated with the first operating environment (update, col. 1 lines 50 - 55).

25.   **As to claim 29**, Kimura teaches interrupt (interrupt, col. 5 lines 40 – 45) for the

reassigned resource so that an interrupt may be used for more than one resource.

26.   **As to claim 31**, see rejection for claim 21 above.

27.   **As to claim 32**, this is the product claim of claim 1. See rejection for claim 1

above.

28.   **Claims 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable**

over by Kimura, US patent no. 6,996,828 in view of Ronkka, US pub. no.

2004/0088710, and further in view of Halang "Real-time Systems" pages 291 –

313.

29.   Halang reference is cited by applicant in IDS filed 8/7/06.

30.   **As to claim 17**, Kimura and Ronkka do not explicitly teach associating the

assigned resource with a software component instance.

Halang teaches wherein the assigning step includes associating the assigned

resource with a software component instance (instance, page 303).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Kimura, Ronkka, and Halang because

Halang's software component instance would maintain the data structure from one

execution of the function block to the next one (page 303).

31.   **As to claim 20**, Halang teaches building a list of available drivers for the

selected resource (p. 310).

32.   **Claims 27 - 28 are rejected under 35 U.S.C. 103(a) as being unpatentable**

over Kimura, US patent no. 6,996,828 in view of Ronkka, US pub. no.

2004/0088710, and further in view of Philyaw, US patent. no. 6,725,260.

33.   Philyaw was cited in previous office action.

34.   **As to claim 27 - 28**, Kimura and Ronkka do not explicitly teach the step of

deleting the installation file.

        Philyaw teaches deleting the installation file (uninstall, col. 32 lines 8 – 10).

        It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Kimura, Ronkka, and Phylyaw because

Phylyaw's deleting installation file would clean up all unwanted driver files and only

maintain current or updated driver files for the system.

35.   **Claims 16 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable**

over Kimura, US patent no. 6,996,828 in view of Ronkka, US pub. no.

2004/0088710, and further in view of Wilson, US pub. no. 2003/0041088.

36.   Wilson was cited in previous office action.

37.   **As to claims 16 and 30**, Wilson teaches updating registry (0018, figure 6 and

associated text).

It would have been obvious to one of ordinary skill in the art at the time the

invention was made to combine the teaching of Kimura, Ronkka, and Wilson's system

because the registry would store archival device information and identify newly installed

devices (0018).

Response to Arguments

38.   Applicant's arguments have been fully considered but are not persuasive.

39.   Applicant argued that at page 12 paragraph 1 – page 13 paragraph, applicant

previously presented an argument explaining that Ronkka does not teach "non-variable

scan cycle timing" and the office action did not consider this argument (page 9 lines 10

– 15).

In response, examiner did consider the argument in previous response. Below is the paragraph copied from previous response to argument in the final office sent 5/22/09 (page 9 – 10) that examiner explained that Ronkka teaches non-variable scan cycle timing.

"The use of non-variable scan cycle timing is the use of timer with fixed or determined or non-variable cycle as disclosed in page 7. Therefore, Ronkka teaches the second operating system has a non-variable scan cycle timing (timer for OS_A so called real-time operating system can not be lengthen or have been determined, 0003, 0060, 0085). The OS has fixed or determined or non-variable timer/timing."

40.   Applicant argued that Ronkka does not describe any non-variable scan cycle timing in such a real-time operating system. There is no description in Ronkka of a non-variable cycle of communication to industrial devices interfaced to the operating system (page 11 lines 10 – 15).

In response, in real-time operating system (RTOS), the response time of the executing task is predicting/non-variable/fixed/determined/not be lengthen. Each response time for each task is scan cycle timing, and since the response time is predicting, it is non-variable. It is how the RTOS works (0002), and it works the same as applicant's system that in real-time execution environment, "timing within the WinLC execution of the program" is deterministic (0022 – 0023). Examiner could not find anywhere in the claims the limitation "a non-variable cycle of communication to

industrial devices interfaced to the operating system" as argued. Therefore, the

argument is irrelevant.

41.   Applicant argued that (for applicant's convenience, examiner copied the whole

argument in the second paragraph of page 11 to first paragraph of page 12).

      "In the Office Action, the Examiner states that "timer for OS_A so called real-time

operating system can be lengthen [sic] or have been determined, 0003, 0060, 0085".

While these cited portions of Ronkka describe responses times can lengthen in non-real

time operating systems, as compared with real time operating systems, and that

response times can be determined in the kernel of real time operating systems, these

cited portions of Ronkka do not contain any description of the real time operating

system having a non-variable scan cycle. As described in the previous Response of

October 3, 2008, a real-time operating system is not the same as an operating

environment with non-variable scan cycle timing. Ronkka does not disclose the use of

such non-variable scan cycle timing. Therefore, Ronkka does not disclose the limitation

of "said second operating environment has non-variable scan cycle timing" as claimed

in claim 1.

      For the reasons described above, neither Kimura nor Ronkka, separately or in

combination, discloses the limitation, "wherein said second operating environment has

non-variable scan cycle timing" as recited in amended independent claim 1. Therefore,

independent claim 1 is allowable over the cited art.

Independent claims 14, 22, and 32 each recite the limitation "wherein said second

operating environment has non-variable scan cycle timing". For the reasons discussed above in connection to independent claim 1, the cited art does not disclose this limitation, and independent claims 14, 22, and 32 are allowable over the cited art."

In response, applicant cut off "not" before lengthen, therefore, it becomes the timer for OS_A so called real-time operating system can be lengthen. Therefore, the meaning is reserved, and argued that Ronkka does not teach "said second operating environment has non-variable scan cycle timing". It is OS_A so called real-time operating system can not be lengthen.

Applicant acknowledged that in paragraph 0002 – 0003, Ronkka clearly described two operating systems in one computing system. With real-time operating system (RTOS), the response time of the executing task is predicting/non-variable/fixed/determined/not be lengthen. Each response time for each task is scan cycle timing, and since the response time is predicting, it is non-variable. With non real-time operating system, the response time can be lengthen/variable. Therefore, Ronkka teaches "second operating environment has non-variable scan cycle timing that is "timer/response time for executing task for OS_A so called real-time operating system can be lengthen" (0002 – 0003, 0060, 0085).

Examiner did not cite a real-time operating system is the same as an operating system with non-variable scan cycle timing. Examiner cited "timer/response time for executing task for OS_A so called real-time operating system can not be lengthen" (0002 – 0003, 0060, 0085) that is a real-time operating system with non-variable scan

cycle timing. Ronkka's real-time operating system still teaches the operating system, as long as the operating system has non-variable scan cycle timing as explained. Actually, claims 2 and 3 claimed one operating system is real-time operating system and one is non real-time operating system, and Ronkka called real-time operating system as "OS_A" and non real-time operating system as "OS_B" (0008, 0060).

Examiner repeats the same response for limitation "second operating environment has non-variable scan cycle timing" in claims 14, 22, and 32.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PHUONG N. HOANG whose telephone number is (571)272-3763. The examiner can normally be reached on Monday - Friday 9:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyunh S. Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hyung S. Sough/   /P. N. H./
Supervisory Patent Examiner, Art Unit 2194   Examiner, Art Unit 2194
01/02/10